

Detailed Action

1. Claims 1-12 are presented for examination.

This Office action is in response to communication dated 3/10/2008.

Priority

2. Applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) is acknowledgment and accepted.

Drawings

3. Replacement drawings dated 03/10/2008 are accepted.

Response to Arguments

4. Applicant's arguments filed 3/10/2008 have been fully considered but they are not persuasive. Applicant argued that:

5. (1) Regarding the Specification objection, the Examiner alleged that no antecedent basis is provided for "re-registration" in claims 1 and 7. Applicant asserts that "re-registration" is preceded by the recitation of "a", which is a proper article to use when such a term is initially recited in a claim. It is respectfully asserted that MPEP 2173.05(e) states that a claim is indefinite when it contains words or phrases whose meaning is unclear. There is nothing unclear by the word "re-registration".

6. In response, it is respectfully noted that the Examiner is not asserting that the claim is unclear or that the term "re-registration" lacks antecedent basis in the claim. MPEP 2173.05(e) is regarding issues related to 35 U.S.C. 112, second paragraph, which is not the current case. Rather, the Examiner is asserting that Applicant's specification does not have clear support for the term "re-registration", and therefore, the term lacks antecedent basis in the specification.

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7. MPEP 608.01(o) states,

“Usually the terminology of the original claims follows the nomenclature of the specification, but sometimes in amending the claims or in adding new claims, new terms are introduced that do not appear in the specification... he or she should make appropriate amendment of the specification whenever this nomenclature is departed from by amendment of the claims so as to have clear support or antecedent basis in the specification for the new terms appearing in the claims. If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced. The specification should be objected to if it does not provide proper antecedent basis for the claims.

8. In this case, the term "re-registration" is a newly introduced term that is not part of the original claims and does not appear in the specification. Applicant had previously submitted that “re-registration” is a subsequent registration at a visited domain. (See Remarks dated 07/31/2006, page 5. "Claim 1 includes the recitation “during a re-registration,” as opposed to an initial registration which is performed when a mobile node first arrives at a visited domain.”) Applicant is required to make appropriate amendment to the description without adding new matter in order to provide clear support and antecedent basis for the term “re-registration” such that “re-registration” refers to supported subject matter in the specification.

9. (2) Regarding claim 1, Madour fails to disclose that the new GGSN serves a foreign agent (FA). Information indicating that the second GGSN supports foreign agent is not transmitted by the old GGSN to a mobile node. The reference fails to teach the message including information indicating that the new GGSN supports FA function.

10. In response, Applicant appears to content that the second GGSN is a new GGSN and that the first GGSN is an old GGSN. However, the claim does not recite of the second GGSN as a new GGSN and the first GGSN as an old GGSN. The claim does not distinguish GGSNs as a new and old GGSN. Furthermore, as explained in further detailed under “Claim Rejections - 35 USC § 112”, the specification does not disclose of a first GGSN, serving as a foreign agent, sending information indicating that the second GGSN supports a foreign agent function.

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11. (3) Regarding claim 11, similarly to the argument directed to the rejection of claim 1. Madour fails to disclose that the new GGSN serves as a foreign agent (FA) as taught herein. Madour fails to receive a message, transmitted by a first GGSN (in a new region to which the mobile node moves), the message indicating that the first GGSN supports a foreign agent function.

12. In response, firstly, it is respectfully noted that claim 11 recites a different feature than claim 1. Claim 11 recites that the first GGSN transmits an Agent Advertisement message with information indicating that the first GGSN supports a foreign agent function while in claim 1, the first GGSN transmits an Agent Advertisement with information indicating that a second GGSN supports a foreign agent function. Secondly, Examiner respectfully disagrees that the Madour fails to teach the argued feature. Madour teaches that the care-of address of the foreign agent in agent advertisement messages are broadcasted by a foreign agent (col. 6, lines 49-53). A user equipment, i.e. mobile node, receives a new FA COA (foreign agent care-of address) from a new foreign agent in the new GGSN (col. 7, lines 31-36). The new GGSN comprises a foreign agent and thus serves as a foreign agent. The message indicates that the new GGSN supports foreign agent function by including the FA COA of the GGSN.

Allowable Subject Matter

13. Claims 7-10 and 12 are allowed.

Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Specification

14. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

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- i) Regarding claims 1 and 7, the term, “re-registration” has insufficient antecedent basis in the specification.

Claim Objections

15. Claim 7 is objected under 37 CFR 1.75 as being a substantial duplicate of claim 12. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

16. Claims 7-10, 12 are objected to because of the following informalities:

Regarding claims 7 and 12, in the phrase, “wherein in the first GGSN in the first region”, "the first region" should be changed to “a first region” since the claim does not previously recite of "a first region". In the phrase, “when the mobile node is in the second region", "the second region" should be changed to “second region”.

Correction is required.

Claim Rejections - 35 USC § 112

17. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

18. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

19. Regarding claim 1, the feature of “transmitting by the first GGSN an Agent Advertisement message with an address of the second GGSN and information indicating that the second GGSN supports a foreign agent function” does not appear to be described in Applicant’s specification. Applicant’s specification recites, “

- i) “The mobile node transmits a location registration request to the first GGSN, upon receiving information indicating that the first GGSN supports a foreign agent function and also receiving an Agent Advertisement message with an address of the second GGSN. The information and the Agent Advertisement message are transmitted by the first GGSN.” (page 8, lines 1-5)
- ii) If the mobile node 50 moves from the region of the GGSN 65 serving as a foreign agent to the region of the GGSN 60, a GTP tunnel is formed between the GGSN 60 and the mobile node 50, and the mobile node 50 receives an Agent Advertisement message from the GGSN 60 serving as a new foreign agent in step 600, as described in the step 501 of FIG. 5. Upon receiving the Agent Advertisement message, the mobile node 50 transmits a Registration Request message to the GGSN 60 in step 601, without storing a gateway foreign address of the GGSN 60, included in the received Agent Advertisement message... In reply to a registration request from the mobile node 50, the GGSN 60 transmits the Registration Request message to the GGSN 65 serving as the gateway foreign agent along with its unique address, in step 603. (page 12, line 18-page 13, line 1, 7-10).

20. According to the above cited passage i of Applicant’s specification, the first GGSN sends Agent Advertisement message with an address of the second GGSN and information indicating that the first GGSN supports foreign agent function, which is in different to the claim’s feature of the first GGSN transmitting information indicating that the second GGSN supports foreign agent function. According to the above cited passage ii, GGSN 60, i.e. the first GGSN, sends an agent advertisement message with a gateway foreign address, i.e. the address of GGSN 65, to the mobile node. The specification further discloses that GGSN 60 functions as a foreign and the GGSN 65 functions as a gateway foreign agent. Since GGSN 60 serves as a foreign agent, the agent advertisement should indicate that GGSN 60 supports foreign agent functions.

Applicant’s specification does not describe a first GGSN such as GGSN 60 transmitting information indicating that a second GGSN such as GGSN supports foreign agent functions. Therefore,

the feature of a first GGSN transmitting information indicating that a second GGSN supports a foreign agent function will not be treated on the merits as the specification does not have descriptive support to properly understand and reject the claimed invention.

Applicant should specifically point out where the originally filed disclosure supports the amendments to the claims. See MPEP 2163 and MPEP 714.02.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 1-3, 6, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madour et al. US Patent #6,904,025 (Madour hereinafter), in view of Gustafsson et al, "Mobile IP Regional Registration" published in July 13, 2000 (Previously cited, Gustafsson hereinafter).

23. As per claim 1, Madour teaches substantially the invention as claimed including a regional tunnel management method in a mobile communication system using Mobile IP, the mobile communication system including a mobile node, a first GGSN (Gateway (GPRS) (General Packet Radio Service) serving agent for storing location information of the mobile node (GGSN2/FA₂), a second GGSN for storing location information of the first GGSN (GGSN1/FA₁), and a home agent connected to the second GGSN, for performing data communication with a correspondent node (col. 7, lines 55-59. home agent.), the method comprising the steps of:

transmitting by the first GGSN an Agent Advertisement message (col. 7, lines 32-36, 43. User equipment receives new FA COA from foreign agent in the GGSN (GGSN2/FA₂).);

receiving said Agent Advertisement message by the mobile node (col. 6, lines 50-54. Care-of-address from agent advertising messages. col. 7, lines 33-35. Acquire new FA COA.) and transmitting a location registration request from the mobile node to the first GGSN (col. 7, lines 27-32. User equipment performs routing update procedure in new routing area. col. 6, lines 58-61; col. 7, lines 37-39. User equipment may initiate registration request.),

transmitting the location registration request from the first GGSN to the “home agent”, the location registration request including the address of the first GGSN to which the mobile node belongs (col. 7, lines 52-59. Registration request of FA₂ to home agent. Update routing table.); and

registering by the second GGSN an address of the first GGSN to which the mobile node belongs, and transmitting by the “first” GGSN to the home agent (col. 7, lines 44-49. New foreign agent communicates with old foreign agent. Claim 1. Transmit data from first gateway to second gateway. Inherent that second GGSN registers first GGSN to transmit data.), a location information message indicating the address of the first GGSN to which the mobile node belongs (col. 7, lines 52-59. Registration request of FA₂ to home agent.).

24. Madour does not specifically teach of an Agent Advertisement message with an address of the second GGSN, transmitting the location registration request from the first GGSN to the second GGSN, and transmitting by the second GGSN to the home agent, a location information message.

25. Gustafsson teaches of a mobile node receiving an Agent Advertisement message transmitted by a FA, wherein the Agent Advertisement message comprises an address of a GFA, (Page. 7, section 3.3). Gustafsson further teaches of transmitting a registration request from the FA to the GFA (Page 9-10, section 3.4.2; Page 26.), and the GFA transmitting a location information message to the home agent (Pages 10-11. Section 3.4.3).

26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Madour with teachings of Gustafsson for the GGSN1/FA₁ to function as a

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gateway for the GGSN2/FA₂, wherein the first GGSN (GGSN2/FA₂) transmits an Agent Advertisement message with the address of a second gateway, in this case, the address of GGSN1/FA₁; and for the FA (GGSN2/FA₂) to transmit the location registration request to the GFA (GGSN1/FA₁), which then transmits the location information to the home agent. The motivation for the suggested modification is that Gustafsson's teachings would provide support for regional registration at the GGSN1/FA₁, and allow registration of the second GGSN (GGSN1/FA₁) to receive data via the first GGSN (GGSN2/FA₂).

27. As per claim 11, Madour teaches substantially the invention as claimed including a regional tunnel management method in a mobile communication system using Mobile IP, the method comprising the steps of:

moving by a mobile node from a current region of a second GGSN (Gateway GPRS (General Packet Radio Service) Support node) to a new region of a first GGSN (col. 7, lines 25-36. User equipment roams into new routing area. New foreign agent in the new GGSN. GGSN2/FA₂),

wherein the first GGSN serves as a foreign agent for storing location information of the mobile node (col. 7, lines 25-36. Acquire new FA COA from new foreign agent in the new GGSN.), the second GGSN stores location information of the first GGSN (col. 7, lines 44-49. New foreign agent communicates with old foreign agent. Claim 1. Transmit data from first gateway to second gateway.), and a home agent is connected to the second GGSN for performing data communication with a correspondent node (col. 7, lines 4-9. Components of GGSN1 sent registration request to home environment, forwarded to home agent.);

transmitting by the first GGSN an Agent Advertisement message and information indicating that the first GGSN supports a foreign agent function (col. 7, lines 32-36, 43. User equipment receives new FA COA from foreign agent in the GGSN (GGSN2/FA₂).);

receiving said Agent Advertisement message by the mobile node (col. 6, lines 50-54. Care-of-address from agent advertising messages. col. 7, lines 33-35. Acquire new FA COA.) and transmitting a location registration request from the mobile node to the first GGSN (col. 7, lines 27-32. User equipment performs routing update procedure in new routing area. col. 6, lines 58-61; col. 7, lines 37-39. User equipment may initiate registration request.),

transmitting the location registration request from the first GGSN to the “home agent”, the location registration request including the address of the first GGSN to which the mobile node belongs (col. 7, lines 52-59. Registration request of FA₂ to home agent. Update routing table.); and

registering by the second GGSN an address of the first GGSN to which the mobile node belongs, and transmitting by the “first” GGSN to the home agent (col. 7, lines 44-49. New foreign agent communicates with old foreign agent. Claim 1. Transmit data from first gateway to second gateway. Inherent that second GGSN registers first GGSN to transmit data.), a location information message indicating the address of the first GGSN to which the mobile node belongs (col. 7, lines 52-59. Registration request of FA₂ to home agent.).

28. Madour does not specifically teach of an Agent Advertisement message with an address of the second GGSN, transmitting the location registration request from the first GGSN to the second GGSN, and transmitting by the second GGSN to the home agent, a location information message.

29. Gustafsson teaches of a mobile node receiving an Agent Advertisement message with an address of a GFA, wherein a FA transmitted the Agent Advertisement message (Page. 7, section 3.3). Gustafsson further teaches of transmitting a registration request from the FA to the GFA (Page 9-10, section 3.4.2; Page 26.), and the GFA transmitting a location information message to the home agent (Pages 10-11. Section 3.4.3).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Madour with teachings of Gustafsson for the GGSN1/FA₁ to function as a

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gateway for the GGSN2/FA₂, wherein the first GGSN (GGSN2/FA₂) transmits an Agent Advertisement message with the address of a second gateway, in this case, the address of GGSN1/FA₁; and for the FA (GGSN2/FA₂) to transmit the location registration request to the GFA (GGSN1/FA₁), which then transmits the location information to the home agent. The motivation for the suggested modification is that Gustafsson's teachings would provide support for regional registration at the GGSN1/FA₁, and allow registration of the second GGSN (GGSN1/FA₁) to receive data via the first GGSN (GGSN2/FA₂).

31. As per claim 2, Madour does not specifically teach the method as claimed in claim 1, wherein the location registration request transmitted by the mobile node includes the address of the first GGSN to which the mobile node belongs.

32. Gustafsson teaches of a mobile node transmits a registration request with the address of the foreign agent (Page 9, section 3.4.2).

33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the mobile node to transmit a registration request with the address of the foreign agent, which would indicate that mobile node has set its care-of-address to the foreign agent and is assigned to the foreign agent.

34. As per claim 3, Madour teaches the method as claimed in claim 1, wherein the Agent Advertisement message is transmitted through a tunnel between the mobile node and first GGSN (col. 7, lines 32-35. Receive FA COA from PDP context activation. Inherent that tunneling is a protocol of GPRS.).

35. As per claim 6, Madour does not specifically teach the method as claimed in claim 1, wherein the Location Information message includes the address of the first GGSN and the address of the second GGSN.

36. Gustafsson teaches of the registration request contains the address of the GFA and the address of the FA (Page. 9-10. Section 3.4.2).

37. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the registration request to contain the address of the GFA and the address of the FA, which would allow the host agent to maintain an entry of care-of-addresses of the mobile node.

Conclusion

38. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

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40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

41. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. J./

Examiner, Art Unit 2154

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2154